

WHAT IS CLAIMED IS:

- 1 1. A matrix graft consisting essentially of collagen and elastin.
- 1 2. A matrix graft in accordance with claim 1, said matrix graft being an
2 acellular matrix graft isolated from muscle tissue selected from the group consisting of
3 bladder tissue, heart tissue, intestine tissue or stomach tissue.
- 1 3. A matrix graft in accordance with claim 2, said graft being isolated from
2 bladder tissue.
- 1 4. A matrix graft in accordance with claim 3, said matrix graft being
2 prepared from tissue isolated from an animal selected from the group consisting of rat,
3 rabbit, hamster, dog, pig and human.
- 1 5. A matrix graft in accordance with claim 3, said matrix graft being
2 prepared from tissue isolated from an animal selected from the group consisting of rat,
3 rabbit, hamster, dog, pig and human, and indicating essentially no cell nuclei when
4 stained with a dye selected from the group consisting of trichrome, H&E, α -actin and
5 PGP.
- 1 6. A matrix graft in accordance with claim 3, said matrix graft being
2 isolated from human bladder tissue and having an elastic modulus of about 0.40 to about
3 0.80 MPa.
- 1 7. A matrix graft in accordance with claim 3, said matrix graft being
2 isolated from rat bladder tissue and having an elastic modulus of about 0.80 to about
3 2.10 MPa.
- 1 8. A matrix graft in accordance with claim 3, said matrix graft being
2 isolated from pig bladder tissue and having an elastic modulus of about 0.25 to about
3 0.60 MPa.

1 **9.** A method for the preparation of a bladder acellular matrix graft,
2 comprising:
3 (a) removing mucosa from an excised bladder cap to provide a bladder wall;
4 (b) treating the bladder wall with chemical and enzyme agents to release
5 intracellular components from said bladder wall to provide an intermediate matrix; and
6 (c) solubilizing and removing cell membranes and intracellular lipids from
7 said intermediate matrix to provide a bladder acellular matrix graft.

1 **10.** A method in accordance with claim 9, wherein said removal of said
2 mucosa is carried out mechanically.

1 **11.** A method in accordance with claim 9, wherein said enzyme agent is
2 DNase.

1 **12.** A method in accordance with claim 9, wherein said chemical agent is
2 sodium azide.

1 **13.** A method in accordance with claim 9, wherein said mucosa is removed
2 by scraping, said chemical agent is NaN_3 and said enzyme agent is DNase.

1 **14.** A method of restoring bladder function in an animal having a partially
2 damaged bladder, said method comprising:
3 (a) removing the portion of the bladder which is damaged; and
4 (b) replacing said portion with a bladder acellular matrix graft to promote
5 regeneration of bladder tissue and restore said bladder function.

1 **15.** A method in accordance with claim 14, wherein said animal is selected
2 from the group consisting of rat, pig, dog and human.

1 **16.** A method in accordance with claim 14, wherein said bladder acellular
2 matrix graft is prepared according to claim 9 and is derived from xenographic tissue.

1 **17.** A method in accordance with claim 14, wherein said bladder acellular
2 matrix graft is prepared according to claim 9 and is derived from allographic tissue.

1 **18.** A method for promoting regrowth and healing of damaged or diseased
2 muscle tissues, said method comprising replacing said damaged or diseased muscle tissue
3 with an acellular matrix graft prepared from muscle tissue and consisting essentially of
4 acellular collagen and elastin.

1 **19.** A method in accordance with claim 18, wherein said muscle tissue is
2 selected from the group consisting of bladder, heart, intestine and stomach.

1 **20.** A method in accordance with claim 18, wherein said acellular matrix
2 graft is organ-specific for said damaged or diseased muscle tissue.

1 **21.** A method in accordance with claim 18, wherein said acellular matrix
2 graft is from autographic tissue.

1 **22.** A method in accordance with claim 18, wherein said acellular matrix
2 graft is from allographic tissue.

1 **23.** A method in accordance with claim 18, wherein said acellular matrix
2 graft is from xenographic tissue.